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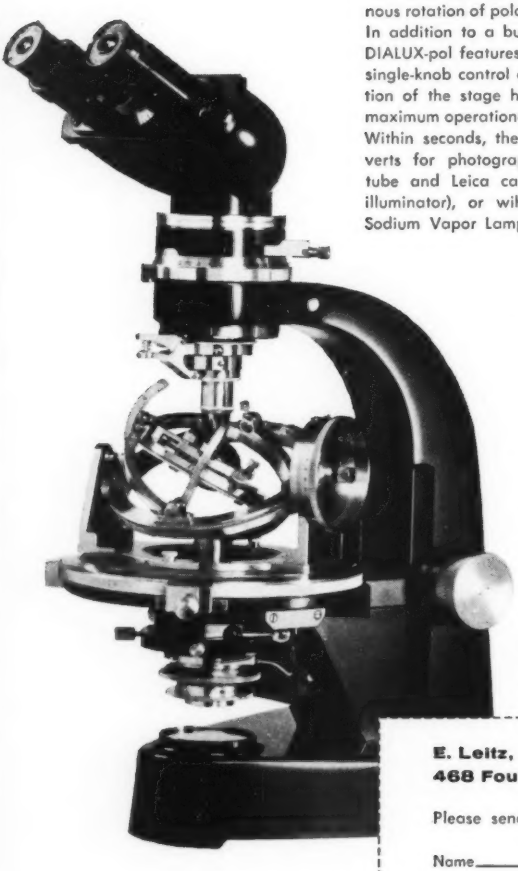

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Calendar

Cooperation of Society Secretaries in supplying meeting notices for GEOTIMES calendar is requested.

Feb. 16-20, 1958—AIME, ANNUAL MEETING, Hotel Statler, New York City. SEcG technical meetings held in conjunction.

March 3-4, 1958—AIME, SOC. PETROLEUM ENGINEERS, Fourth Annual joint meeting, Rocky Mt. Petroleum Sections, Cosmopolitan Hotel, Denver, Colo.

Mar. 7-8, 1958—AAPG: Pacific Section Ann. Mtg., Ambassador Hotel, Los Angeles, Calif.

Mar. 10-13, 1958—AAPG-SEPM ANNUAL MEETING, Biltmore Hotel, Los Angeles, Calif.

Mar. 20-21, 1958—AIME: MID-CONTINENT LOCAL SEC; Petroleum Production & Reservoir Engineering Conf., Mayo Hotel, Tulsa, Okla.

March 23-29, 1958—ACSM-ASP: Consecutive Meetings and Co-Exhibit, Shoreham Hotel, Washington, D. C.

March 27-29, 1958—OPTICAL SOCIETY OF AMERICA, Spring meeting, Sheraton-Park Hotel, Washington, D. C.

Mar. 27-28, 1958—SEPM, (PERMIAN BASIN SECT.) Ann. Tech. Mtg. Registration and sessions at Hotel Scharbauer, Midland, Tex. J. P. D. Hull, Jr., Chrmn. Loc. Comm.

Mar. 27-29, 1958—AIME: PACIFIC SOUTHWEST CONF.; St. Francis Hotel, San Francisco

Mar. 28-29, 1958—GSA, CORDILLERAN SECT., Annual Meeting, Eugene, Ore. Field trip on March 27.

April 10-12, 1958—SEPM, SPRING FIELD TRIP of the Permian Basin Sect., to localities in Apache, Wylie, Van Horn & Indio Mt., Trans-Pecos Texas. Registration at Van Horn April 10. Write: Wayne Roye, Box 633, Midland, Texas.

April 17-18, 1958—SEGp, 11th Annual Midwestern Meeting sponsored by Geophys. Soc. of Tulsa & the Tulsa Geol. Soc., Mayo Hotel, Tulsa, Okla.

April 17-18, 1958—AIME, SOC. PETROLEUM ENGINEERS, Gas Technology Symposium, Lou.-Ark., Miss. & East Texas Sections, Shreveport, La.

April 17-19, 1958—SIGMA GAMMA EPSILON, 19th Biennial Convention, Pittsburgh, Pa.

April 17-19, 1958—AIME: PACIFIC NORTHWEST REGIONAL CONF., Spokane, Wash.

April 21-22, 1958—FOURTH INSTITUTE ON LAKE SUPERIOR GEOLOGY, sponsored by Superior Geology Club & Univ. of Minnesota, at Duluth Branch of the University, Duluth 11, Minn. Field trip on April 20.

April 23-25, 1958—SECOND INTERNATIONAL WILLISTON BASIN SYMPOSIUM, sponsored by Sask. Geol. Soc. & N. D. Geol. Soc., Provincial Museum Bldg., Bismarck, N. D.

Apr. 27-30, 1958—AAPG, ROCKY MTN. SECTION, 8th Ann. Conv., Industrial Bldg., Natrona County Fairgrounds, Casper, Wyoming.

May 1-3, 1958—GSA, SOUTHEASTERN SECTION, Co-sponsors are Ala. Geol. Surv. and Dept. of Geol., Univ. of Ala.; Theme: Economic Geology of the Southeastern U. S. in relation to future world events. Tuscaloosa, Ala.

May 5-6, 1958—AIME, SOC. PETROLEUM ENGINEERS, Third Biennial Secondary Recovery Symposium, Wichita Falls, Texas.

May 5-7, 1958—AGU, Thirty-Ninth Ann. Mtg., Nat. Acad. Sci., Washington, D. C.

May 8-10, 1958—GSA ROCKY MOUNTAIN SECTION, annual meeting, Golden, Colo. Field trips May 10.

May 9-11, 1958—AIME: URANIUM SECT., 3rd Annual Uranium Symposium, Moab, Utah.

May 17-18, 1958—FRIENDS OF THE PLEISTOCENE; for information write: Wilson M. Laird, Univ. of North Dakota, Grand Forks, N. D.

July 4-7, 1958—SWEDISH GEOLOGICAL SURVEY, 100th Jubilee Meetings, Stockholm, Sweden. Excursions before and after meetings.

Aug. 24-30, 1958—INTNTL. CONGRESS OF PREHISTORY & EARLY HISTORY, Hamburg, Germany. For information write: Professor Gerhard Bersu, Frankfurt-am-Main, Palmengartenstrasse 10-12.

Aug. 26-28, 1958—SYMPOSIUM ON PROBLEMS OF THE LAHONTAN BASIN, spons. by Sigma Xi Club of Univ. of Nevada, on campus, Reno, Nevada.

Sept. 2-4, 1958—SVP: Annual Meeting with SSE, University of Michigan, Ann Arbor, Mich.

Sept. 10-12, 1958—AIME: SOC. OF MINING ENGRS., Rocky Mountain Mins. Conf., Salt Lake City.

Oct. 5-8, 1958—AIME: SOC. PETR. ENG., Fall Meeting, Houston, Texas.

Oct. 9-11, 1958—OPTICAL SOC. OF AMER., Ann. Mtg., Statler Hotel, Detroit, Michigan.

Oct. 13-16, 1958—SEGp: 28th Ann. Meeting, Gunter Hotel & Municipal Auditorium, San Antonio, Texas.

Oct. 16-17, 1958—AIME: Southern California Petroleum Sect. Fall Meeting, Biltmore Hotel, Los Angeles.

Oct. 22-24, 1958—AAPG, Southwest Regional Meeting, sponsored by SW Fed. of Geol. Socs., City Auditorium, Mineral Wells, Texas.

Oct. 23-25, 1958—AIME: Mid-America Minerals Conference, St. Louis.

Nov. 6-8, 1958—GSA: ANNUAL MEETING, St. Louis, Mo., SEcG Ann. Mtg. in conjunction.

Lake Superior Institute

The fourth Institute on Lake Superior Geology will be held at the Duluth Branch of the University of Minnesota, April 21-22, 1958, under the joint sponsorship of the University and the Superior Geology Club. Ralph W. Marsden is General Chairman of the Institute which will feature two days technical sessions preceded by two field trips on Sunday, April 20, one to the Mesabi Range and the other in the vicinity of Duluth to visit parts of the Duluth Gabbro Complex. Persons desiring further information may write *Ralph W. Marsden, Oliver Iron Mining Div., U. S. Steel Corp., 612 Wolvin Bldg., Duluth 2, Minn.*

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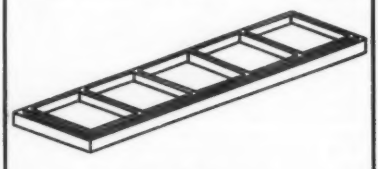

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Robert C. Stephenson, EDITOR

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Page

Investigating the Sea Floor with Diving Geologists
By Robert F. Dill 6

Geologists in Limelight at AIME Meeting 8

AAPG-SEPM Meeting, Los Angeles, March 10-13 9

The AGI and GeoTimes Need Your Support 10

Tulsa Societies Continue Public Education Program 16

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EARTH FOR THE LAYMAN *by Mark W. Pangborn, Jr., about 64 pages, 1957, $1.00 paper bound.*

An annotated listing of more than 1400 popular books on geology and related subjects for lad, lass and layman. The book is conveniently divided by subject. Books suitable for youth are particularly noted. Professional geologists themselves will find this valuable for references on history of geology and biographies of famous geologists.

AGI REPORT 12, *1957 Edition,* "SURVEY OF GEOLOGY-GEOPHYSICS STUDENTS IN THE COLLEGES AND UNIVERSITIES OF THE U. S. AND CANADA IN 1956-57," *$0.50.*

Contains detailed information on 1957 student survey, but does not contain scholarship-fellowship data listed in the 1956 report above.

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Is Geology Asleep at the Switch?

To date, in the Sputnik-stimulated era of scientific awakening, the geological sciences are just rocking along. Geology has not been taken aboard the scientific bandwagon and the geological profession appears somewhat frustrated and dismayed at being left in the background as the parade moves off with growing momentum. Answers to some leading questions might tell why geology is not on the bandwagon.

1. Are we doing an effective job of creating public awareness of geology and the importance of geology to modern science and technology?
2. Are we providing adequate teacher training in geology to our high school science teachers?
3. Are we working to stimulate top talent among the youth of today to train for careers in geology?
4. Are our standards of college education in geology sufficiently up-to-date, broad and rigorous so that graduates are adequately trained to meet current demands and those of the future?
5. Have we defined the frontiers of geological research and are we aggressively attacking these frontiers?
6. Are we dynamically widening the horizons of application of geology?
7. Do we present and support a united professional front as geological scientists, regardless of specializations and employer?
8. Dependent as the profession is on the research work, basic mapping and other functions of the government geological surveys, both state and federal, why is there so little concerted support of these organizations by the profession? For that matter, why are the public education-public relations programs of most of these surveys so weak and ineffectual?
9. Why is the profession so disinterested in our vacillating mineral resource policies, especially since they involve mineral exploration and consequently the welfare of the geological profession?
10. Are we able to define and establish our own place of respect in the modern scientific community?

Honest answers to these questions are not likely to stimulate professional pride. The time is right for a geological renaissance. Let's salvage the solid parts of the "T-Model" geology and geological philosophy which served grandpappy so well and begin to develop a modern, forward-looking profession.

OUR COVER

Diving geologist in the "giant kelp beds" off southern California. Areas like this are typically associated with rock bottom. *Photo by U.S. Navy, Electronics Lab.*

The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Sciences-National Research Council. It is the instrument of the profession serving and advancing the welfare of the geoscientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public education and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

GEOTIMES is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.

Investigating the Sea Floor With Diving Geologists

By Robert F. Dill [1]

Scientific diving with Self-Contained-Underwater-Breathing Apparatus (SCUBA), began in the United States early in 1949 soon after the first French "Aqua-Lung" was introduced into this country. However, it was not until 1952 that SCUBA came into general use as a tool for geologists. Its first use in the field of geology was in the study of recent sediments; however, it soon became apparent that the equipment had other useful applications. A geologist can, with relative ease, do underwater field mapping as long as there are outcrops and contacts to man. Previous to the use of SCUBA, the geologist's personal observations were stopped at the shore line. Direct mapping of the sea floor is the best hope for a real correlation between offshore and onshore geology. Geologists were therefore forced underwater by necessity and over the past 5 years SCUBA has become a standard tool for many research institutions and commercial firms which are investigating nearshore shallow-water geological problems.

SCUBA equipment has gained a great deal of its popularity because it is relatively easy to use and long training periods are not necessary as is the case with conventional diving equipment.

The principle advantages of SCUBA over conventional diving equipment are that the initial expense and upkeep costs of the equipment are low, the equipment is simple in design, and easy to use; there is complete freedom from surface dependence, which permits a greatly increased mobility underwater. The diving geologist is unique in his field methods. He literally flies over his area for he is essentially weightless, his buoyancy counteracting the effects of gravity as he swims from outcrop to outcrop.

A properly trained scientist-diver using SCUBA is relatively free of the conventional diving hazards as is evident by over 15,000 casualty-free dives that have been made by personnel of the Navy Electronics Laboratory and Scripps Institution of Oceanography.

One of the most important types of underwater geological measurements, because of its potential economic applications, is the mapping of outcrops on the sea floor for the purpose of finding possible oil structures. Techniques used under water are similar to those used by geologists on land. Attitudes are taken in various locations and plotted on a map chart, or aerial photo. Rock samples are taken for paleontological and lithologic information; the combined data are then analyzed for possible structural significance. Problems that are encountered in the field (which is, in this case, under water) are worked out in much the same manner as a geologist would approach a problem on land. The diving geologist has one advantage in this particular phase of mapping however, for he is always accompanied by a "buddy diver;" who is usually also a geologist. The observations at each outcrop are compared and agreement reached before the divers ever return to the surface. How many fiield geologists ever compare their work outcrop by outcrop with a fellow geologist in the field and insist on agreement before moving on to another location? As we all know, very few.

For measuring attitudes several instruments have been combined to make the underwater geologists "Brunton." A small lucite pad with an attached compass in a water-tight case, a clinometer, and a writing slate, are his basic tools for measuring dip and strike of underwater rock outcrops. The writing slate is necessary because it has been found that a man breathing compressed air forgets very easily while underwater. Unless all observations are immediately recorded and checked by the "buddy diver," they cannot be depended on. Remembered data is often found to be unreliable, even when collected by the most competent men. In addition to his "underwater Brunton' the diving geologist carries a standard geological hammer for rock sampling, a knife, a depth gauge, an underwater watch, and small marker buoys to be sent to the surface if exact locations of bottom features are needed. He wears an

[1] Robert F. Dill is associated with Sea-Floor Studies Section, U. S. Navy Electronics Laboratory, San Diego, California.

exposure suit to protect him from the cold water in which he must work most of the time. Fortunately, the problem of working in cold water has been almost eliminated with the development of extremely efficient exposure suits. Temperature is no longer a difficult problem for divers, even in water with temperatures as low as 47° F. This is not to say that a diver is invariably "toasty-warm" if he puts on an exposure suit. It merely means that he can still function primarily as a geologist.

The experienced underwater geologist can work to a depth as great as 150 feet with relative ease. The number of dives depends on the depth of water in which diver works and the amount of time he stays there, for the deeper a diver goes the shorter the period of time he can spend underwater. As many as 15 dives a day can be made in shallow water (above 40') but 6 is an average day's work. In southern California over 8,000 commercial dives for major oil companies interested in geological information have been made between the Mexican Border and Point Conception. This covers an area of over 1,000 square miles. No further proof of the value of SCUBA as a geological tool is needed.

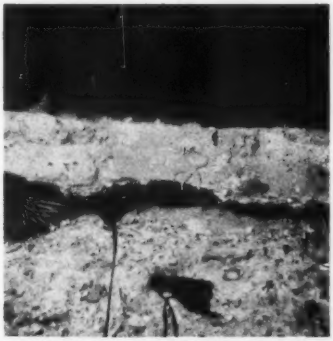
The underwater geologist is much more specialized than his dry-land counterpart, for in addition to his basic knowledge of geology, he must also have a working knowledge of diving physiology and be able to cope with the problems that can occur during his work underwater. Terms like *"bends," "oxygen poisoning," "nitrogen narcosis," "air embolism"* and *"decompression"* are as common in his vocabulary as *"dip," "strike"* and *"contact."* In addition to problems in diving physiology the diving geologist finds that he is also forced to become a practicing biologist, for it is quite often that the general appearance of the bottom life or the presence of a certain type of fish will indicate where a rock outcrop may lie in an area predominantly covered with sediment. The geologist who ventures beneath the sea finds himself acting in much the same role as the

(Continued on page 15)

UPPER LEFT:
"Ripple marks" in a sand channel between two rock ridges are examined by geologist. *—Photo by U.S. Navy, Electronics Lab.*

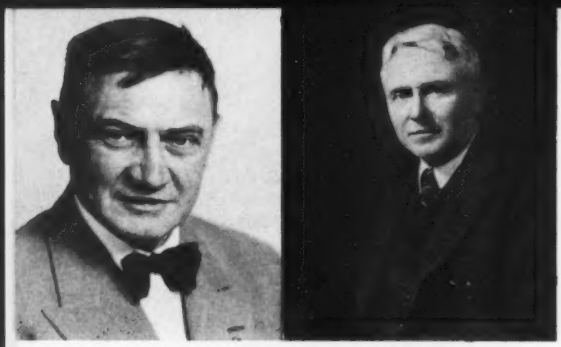
CENTER:
Measuring the dip of an underwater outcrop. Outcrops like the one appearing in this photograph often occur as long strike ridges in a predominantly sediment-covered sea floor.

UPPER RIGHT:
Diving geologists enter a large submarine cave. Without SCUBA equipment, divers would find it impossible to record altitudes of beds and to collect samples in places such as this.*—Photo by U. S. Navy, Electronics Lab.*



Rock exposure in a small strike ridge shows complete encrustation by sea organisms.*—Photo by U. S. Navy, Electronics Lab.*

A preliminary edition of a *Directory of Scientists, Engineers and Technicians using* SCUBA was recently sent to all of those who responded to the questionnaires circulated by Robert F. Dill of the Navy Electronics Laboratory, San Diego, California. This preliminary directory lists 300 persons in 26 different countries, indicating the widespread use of SCUBA in all types of scientific and engineering work. SCUBA users who have not registered are urged to do so by writing R. F. Dill at once.



Fred Searls, Jr., left, and Donald H. McLaughlin, right, are to be awarded Honorary Membership in the AIME. Both of these prominent mining executives are geologists.

Geologists In Limelight at AIME Meeting

A group of outstanding geologists will be singled out for honors when the three Members Societies of the American Institnte of Mining, Metallurgical and Petroleum Engineers meet at the Statler Hotel in New York, February 16-20.

Geologist Ralph O. Rhoades, Senior Vice President and Director of the Gulf Oil Corporation, Pittsburgh, will be the speaker at the annual dinner of the Society of Petroleum Engineers. Another out standing geologists on the SPE program is James Terry Duce of the Arabian American Oil Co., who will present a paper "The Evolution of Foregin Petroleum Laws."

Two prominent mining geologists will be awarded Honorary Membership, the Institute's highest distinction. Receiving this honor will be Dr. Donald H. McLaughlin, President and Director of the Homestake Mining Company, San Francisco, who has made a distinguished record as a successful mining geologist, educator, administrator, and statesman of the profession. Dr. McLaughlin, a past president of AIME, is also a fellow of the Geological Society of America and a member of the Society of Economic Geologists, which are AGI Member Societies. The other geologist-recipient of the coveted Honorary Membership is Fred Searls, Jr., Chairman of the Board of Newmont Mining Corp., New York. Mr. Searls has had rich and varied experience in the mining industry of the world. Outstanding among his contributions was his World War II service on the War Production Board and to other government emergency agencies. Mr. Searls was the AIME's Saunders Medalist in 1946. He is also a fellow of the Geological Society of America.

Dr. A. F. Agnew, Director of the South Dakota Geological Survey, will be the recipient of the Society of Mining Engineer's Robert Peale Memorial Award for his paper "Application of Geology to the Discovery of Zinc-Lead Ore in the Wisconsin- Illinois-Iowa District" which has been published in Mining Engineering. The Peale Award is given to encourage young men under 40 in creative work in mining, geology and geophysics and to recognize significant achievement in authorship in these fields. Dr. Agnew is a member of AAPG, GSA (fellow), and the SEPM, all of which are AGI Member Societies.

The Daniel C. Jackling Award is being presented this year at the Mining, Geology and Geophysics Division Luncheon to another prominent geologist-executive, A. H. Shoemaker, Vice President and General Manager of the Homestake Mining Co., with headquarters in San Francisco. The Jackling Award is a bronze plaque presented for "significant contributions to technical progress in the fields of mining, geology, and geophysics." His Jackling lecture will be entitled "Planning for Deep Mining at Homestake." Geologist Reno H. Sales received the first Jackling Award and the geophysicist, Father James B. Macelwane, was the 1956 recipient. Last year the award was presented to Dr. Joseph L. Gillson, who was at the time President of the American Geological Institute.

A LOCAL PROJECT

Is your local geophysical society or student geology club looking for a public service project which would contribute to the improvement in teaching of science and mathematics?

March 16-22 is NATIONAL LIBRARY WEEK and here is an idea for you.

Why don't you select a group of books relating to the geological sciences and purchase these for the science libraries in your local schools? Don't restrict your gifts to the high schools for some of the most fascinating science books levelled at the children in grades 1 to 6 are on geology and related subjects.

Need help with the selection? We suggest that you send a buck to AGI for a copy of the new "EARTH for the Layman" which lists nearly 1,400 popular titles on geology and related subjects. You should have this book on your book shelf anyway.

AAPG - SEPM ANNUAL MEETING

Los Angeles–March 10-13

Theme is oil possibilities of lands bordering Pacific

With the Pacific Section acting as host, the 43rd Annual Meeting of A.A.P.G. will be held jointly with SEPM's 32nd, at the Biltmore Hotel in Los Angeles, March 10-13, 1958.

The several thousand geologists and paleontologists expected to attend this meeting will be welcomed by Graham B. Moody, President of AAPG, and by Leo Newfarmer, General Chairman of the Convention, who is Pacific Coast Exploration Manager for Shell Oil Company. R. V. Hollingsworth, President of SEPM will also be on hand.

Central theme of the technical program will be petroleum possibilities and development in lands bordering the Pacific, with considerable emphasis on a secondary theme of thrusting in relation to oil occurrences. Included are papers on California, Canada, Alaska, Soviet Russia, Japan, Taiwan, Philippines, Indonesia, New Guinea, Australia, New Zealand, the West Coast of South and Central America, and Mexico.

Thrust faulting will be discussed by a recognized authority, Dr. Walter H. Bucher of Houston, Texas. Other papers will cover thrust faulting in California, the Rocky Mountains, and in the Romanian oil fields. To round out the world-wide coverage, there will be papers on the Louisiana salt domes, the oil basins of the Arctic Ocean, petroleum exploration in Spain and in Saudi Arabia, and the gas fields of Northeast Baluchistan.

A highlight of the meeting will be a joint symposium on the first day, arranged by the SEPM and AAPG Research Committee, on silica in sediments. Other technical papers on the SEPM program cover correlation methods and criteria, mineralogy, sedimentary petrology, paleontology and stratigraphy.

Keynote speaker will be H. S. M. (Max) Burns, President of Shell Oil Company, New York, who recently was elected Board Chairman of the American Petroleum Institute. Other speakers include Frank A. Morgan, Los Angeles consultant, who is Past President of AAPG, and Lewis G. Weeks, of Standard Oil Company of New Jersey, New York, who is Past Vice President. Dr. U. S. Grant IV, President of the AAPG Pacific Section, also will address the meeting.

The Sidney Powers Memorial Medal, awarded annually by the AAPG in recognition of distinguished achievement in petroleum geology, will be presented to Dr. Paul Weaver, of Houston, Texas, who is Past President of the Association.

Those awarded honorary membership in AAPG are Dr. Carroll E. Dobbin, Denver, Colorado; Dr. Kenneth C. Heald, Fort Worth, Texas; Dr. William B. Heroy, Dallas, Texas; Dr. A. I. Levorsen, Tulsa, Oklahoma; Dr. Raymond C. Moore, University of Kansas, Lawernce, Kansas; and Wallace E. Pratt, Carlsbad, New Mexico. Messrs. Heroy, Levorsen and Pratt are Past Presidents of the AAPG, and Dr. Moore served for many years as Editor of the AAPG Bulletin.

Honorary membership in SEPM will be awarded to Charles E. Decker, University of Oklahoma, Norman, Oklahoma; Marcus A. Hanna, Houston, Texas; and Hans E. Thalmann, Stanford, California. Recipients of other awards by SEPM, for the best 1956 papers, are Christina Lochman Balk, Socorro, New Mexico (Paleontology); and Maurice A. Carrigy, University of Western Australia, Nedlands, Western Australia, (Sedimentary Petrology).

Entertainment planned for the Meeting includes a dinner-dance at the new Beverly-Hilton Hotel in Beverly Hills, a Fashion Show Luncheon and Studio tour for the ladies, and a Disneyland tour. Numerous field trips have been arranged.

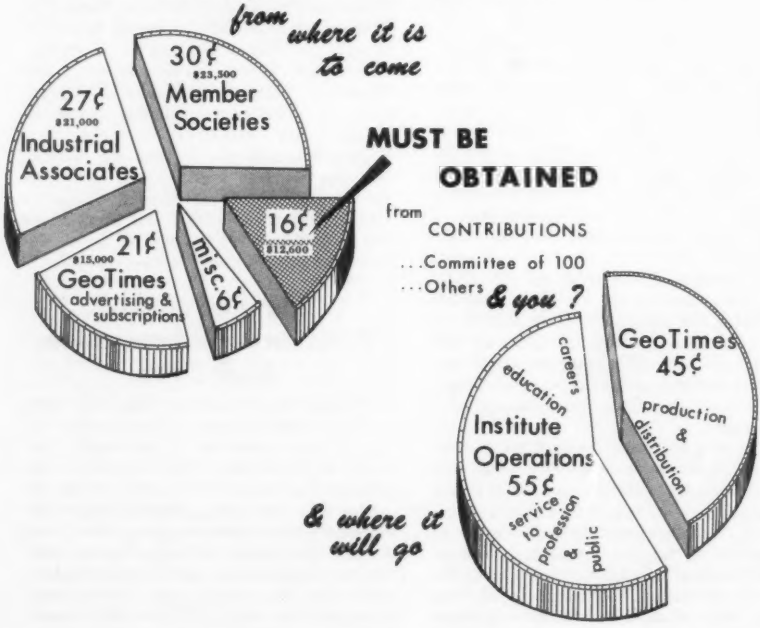
2nd International Williston Basin Symposium April 23-25

The keynote speaker of the 2nd International Williston Basin Symposium will be the past president of the AAPG, Ted Link. The meeting will be held in Bismarck, North Dakota, April 23 to 25, under the joint sponsorship of the Saskatchewan Geological Society and the North Dakota Geological Society. Persons wishing to register or to obtain additional information may write the Saskatchewan Geological Society, P.O. Box 234, Regina, Saskatchewan.

THE AGI & GEOTIMES NEED YOUR SUPPORT

- GeoTimes goes to nearly 30,000 geoscientists who are members of the 14 AGI Member Societies. It is your news magazine.
- GeoTimes provides the only medium for carrying professional news to the whole profession.
- Member Societies contribute funds to staff and operate the AGI office.
- Member Societies do not contribute funds to GeoTimes even though GeoTimes goes to members of AGI Member Societies.
- GeoTimes funds must come from individual contributions and advertising income.

THE 1958 A.G.I. DOLLAR.....



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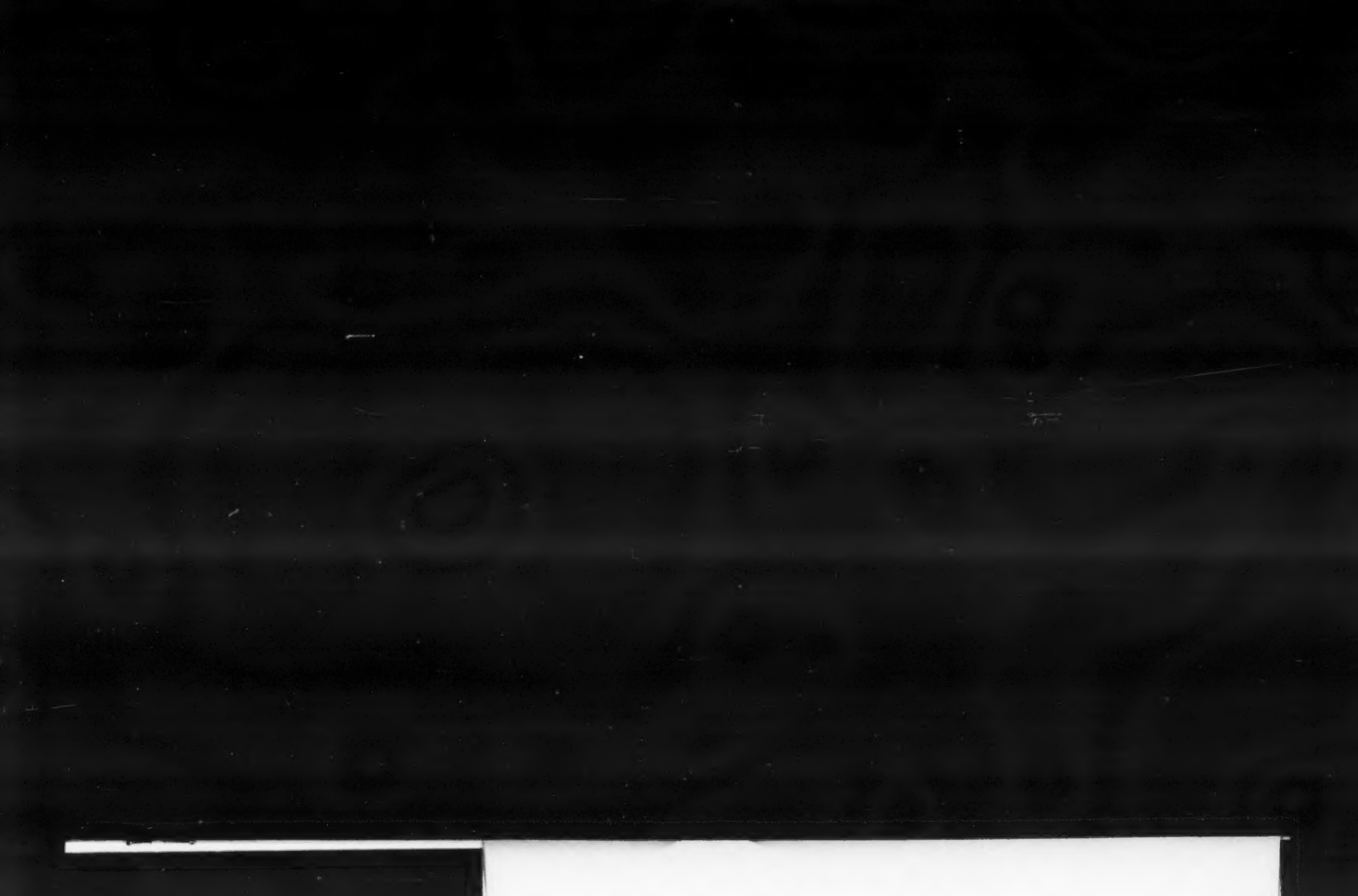

A WORD MORE

about our finances.

The constitution and by-laws of the American Geological Institute obligate no one to the support of the Institute but obviously, if the AGI is to function, it must have funds. Furthermore, the Institute must have a voice if it is to work with and for the geoscientists for the betterment of the profession. That voice is GeoTimes. Without GeoTimes going to all of the profession, the voice of the American Geological Institute would be about as effective as a crusading parson with laryngitis.

The Member Societies have recognized the need for a sound financial basis in the operation of the AGI and from their own limited resources are now contributing collectively a sum of about $23,500 annually to the operation of the Institute. This sum provides for minimum staffing and operation of AGI. By specific intent of the representatives of the Member Societies sitting on the AGI Board of Directors, this measure of support does not provide for GeoTimes. This means that the profession, through the Member Societies, is contributing about $0.80 per individual to the basic cost of the Institute.

GeoTimes is required to carry its own weight. Its sources of income are (1) from the sale of advertising and (2) from voluntary contributions of individuals. The production, printing and distribution of GeoTimes costs AGI $35,000 per year, or about $1.25 per reader.

GeoTimes and the American Geological Institute cannot be all things to all geoscientists. However, we believe that any member of the profession who takes an unbiased, but thorough, look at the AGI, its program, and its potentialities, will conclude that the Institute is worth more than token support. Our methods of financing may not be ideal, but we must work within the framework of our constitution.

Not only does AGI seek your financial aid but it needs your participation, your advice, and your enthusiasm. YOU ARE THE AMERIGAN GEOLOGICAL INSTITUTE.

A Geologist With A Geologic Hunch

A geologist with a scientific hunch was one John T. Williamson when he roamed the desolate country of northwestern Tanganyika in 1940, enduring malaria, sunstroke, thirst, hunger and, worst of all, ridicule. It could be modestly claimed that at least one geologist's conviction paid off, for when John Williamson died on January 8 in Africa at the age of 50 he was reported to be the world's richest bachelor. In 1940, at Mwadui, Tanganyika, he found the world's richest diamond mine.

A friend quipped that Williamson's newfound wealth, after six years of searching, hardship, and privation, *went right to his head—he bought himself a new sun helmet!* He was a man of modest interests and despite his wealth, which accumulated at the rate of millions of dollars per year, he lived very simply and continued to enjoy geologic work. He successfully battled Sir Ernest Oppenheimer and the mighty De Beers syndicate over the marketing of his diamond output. At the time of her coronation, Williamson presented Queen Elizabeth with the largest pink diamond in the world—a 54 carat raw gem which after cutting weighed 24 carats.

As is often the case, Williamson gravitated into geology during his college years. He was studying law at McGill when his interest in geology was awakened through a vacation trip to Labrador. He switched from law to geology and was the recipient of the LeRoy Memorial Scholarship in Geology while working for his doctorate at McGill. In 1951, a decade after his fabulous discovery, Dr. Williamson returned to the McGill University campus to be awarded the honorary degree of Doctor of Science.

Dr. Williamson worked first for the Quebec Geological Survey when he completed his graduate work, but in 1935 accepted a position as a geologist under his former professor, Dr. J. Austen Bancroft, who was then directing exploration in Africa for the Anglo-American Corporation of South Africa. From this assignment he went with the De Beers interests for a brief tour of duty.

His interest in diamond exploration was whetted and his geologic reasoning led him to disagree with experts who questioned that a significant diamond deposit could occur in Tanganyika. Dogged determination and a geologic conviction led him to success after six years of searching.

MANPOWER *in a column —*

By HOWARD A. MEYERHOFF
Scientific Manpower Commission

Just as some of our industrialists and government officials were beginning to relax in the ill-founded notion that the technological manpower problem was solved, along came Sputnik. And just to prove it wasn't the only satellite they ever released, the Russians sent up a second, complete with dog.

Now nearly every Congressman is thinking up ways of recruiting and training more scientists and engineers. But we haven't seen much thought given to their employment after they are trained. In fact, generous appropriations are in prospect for training, whereas budgetary cuts are contemplated for the jobs that the existing supply can most effectively fill.

In all the excitement, earth scientists seem to be forgotten men. With the biologists, they were excluded from civil service pay adjustments from which physicists, chemists, mathematicians, and engineers are benefiting. Perhaps someone should tell the Congress and the Administration that the Russians have literally hundreds of field parties probing the USSR for mineral resources—and finding them; that our mineral reserves, which were—and are—the foundation of our industrial strength, are suffering steady depletion; that mining engineers, geologists, and geophysicists may be low men on the manpower totem pole, but they are the people who hold it up.

In academic year 1956-57, figures in the engineering field went up, but the rise was negligible: 231 bachelors, 22 masters, and no Ph.D.s in mining; 234 bachelors, 19 masters, and 1 Ph.D. in geological engineering; 26 bachelors, 2 masters, and no Ph.D.s in geophysical engineering. The Office of Education has not completed its tabulation of degrees granted in the physical sciences last year, but AGI found 2,982 seniors majoring in geology and geophysics in the survey conducted last spring. There were 2,195 graduates in 1955-56, so it looks as if the new supply may have gone up 33⅓ per cent or more in June 1957.

Is this too many? The answer would be "Yes" if we based our judgment on government salary policy, economy cutbacks ordered by the Administration or forced by lack of Congressional appropriations, curtailment of domestic oil and metallic programs. The answer must be "No!" however, if we focus on the imperative need to strength the earth science foundation on which our economy and security rest. We need someone to sell this point to the government and the public.

ALAN F. BATEMAN

A portrait of the prominent economic geologist, Dr. Alan M. Bateman, was unveiled in December in the Faculty Lounge of the Hall of Graduate Studies, Yale University. Dr. Bateman, Silliman Professor of Economic Geology at Yale since 1925, retired last year. He is widely known as one of the outstanding authorities on mineral deposits and their origin and occurrence. Dr. Bateman is a fellow of the Geological Society of America and is a member of the AIME, AAPG, and SEG. He has served as Editor of Economic Geology for a number of years.

The portrait, which was unveiled by Mrs. Bateman, was presented in tribute to Dr. Bateman by members of the Dana Club, geology graduate students organization, and his former students.

SHELL SCHOLARSHIPS

The Shell Oil Company Foundation, Inc., recently announced sponsorship of a new program which will provide scholarship aid in Oklahoma to graduating high school seniors who intend to take college training for a career in teaching science and mathematics. In its first year the program will provide 25 four-year scholarships and by 1961 will provide 100 full college scholarships.

Popular Geology in Print

by Mark W. Pangborn, Jr.

Outstanding in the recent spate of company histories is *Kendall Beaton's* ENTERPRISE IN OIL (Appleton-Century-Crofts, 1957, $7.50), a detailed, documented, yet thoroughly readable account of the American Shell companies' development sice 1912. FLOWING GOLD, THE ROMANCE OF OIL, *by John J. Floherty* (Lippincott, 1957, $3.75), describes, for ages 12 to 16, the various careers available in the industry. The history of Venezuellan oil and the recent fabulous iron ore discoveries are the subject of *Myrick* and *Barbara Land's* vivid JUNGLE OIL (Coward-McCann, 1957, $1.95), also intended for older children. Boys 12 to 16 will enjoy *Edward A. Herron's* informative novel of wildcatting near Los Angeles in the 1920's, SIGNAL HILL (Knopf, 1956, $2.50).

At last a history of the American conservation movement has appeared in *David Cushman Coyle's* CONSERVATION, AN AMERICAN STORY OF CONFLICT AND ACCOMPLISHHMENT Rutgers University Press, 1957, $5); clearly and simply written, this book traces all phases of the movement from Gifford Pinchot's early forestry activities of 1907; unfortunately there is no bibliography. For a look at the future we can refer to THE NEXT HUNDRED YEARS: MAN'S NATURAL AND TECHNOLOGICAL RESOURCES, by *Harrison Brown* and others (Viking, 1957, $3.95), a fascinating and often frightening assessment of the ability of our resources to support a world population which *may* "level off" at 7 billion by the year 2050.

William John Miller's CALIFORNIA THROUGH THE AGES (Westernlore Press, 1957, $6.50) is a semi-popular geological history of California, emphasizing stratigraphy; it's a good reference book for the student or the serious amateur, rather than a layman's introduction, such as *Camp's* EARTH SONG OF *Willard's* ADVENTURES IN SCENERY. A down-to-earth handbook for the collector is ROCKS AND MINERALS OF CALIFORNIA AND THEIR STORIES, by *Vinson Brown* and *David Allan* (Naturegraph Co., San Martin, Calif., 1957, $2.75); about half the book is devoted to recognition keys, and the reminder is composed of maps which indicate good collecting localities.

Geology in the Public Eye

by Robert L. Bates

For an example of a handsome and useful emissary from geology to the general public, take a look at the *Georgia Mineral Newsletter*. Published by the state's Geological Survey, the Newsletter appears four times a year. It is printed on good paper, 8½ by 11 inches, and is liberally illustrated. The editor, A. S. Furcron, says he follows few rules about getting the Newsletter out, and in fact he never knows where the next issue is coming from. There are lots of publications like that, and most of them show it. This one doesn't.

The Newsletter is a quality publication in content as well as format. Editor Furcron thinks many people are tired of the gee-whiz Sunday-supplement style of journalism, and he does not hesitate to run technical articles. The Autumn 1957 issue, for example, contains an article on the Clayton iron ores of Webster County, with a colored geologic map; a 17-page paper by Vernon Hurst on prehistoric vertebrates of the Georgia Costal Plain, with maps and 14 excellent drawings; a summary of the state's ground-water resources, by J. T. Callahan of the USGS; an illustrated article on placer-mining methods, reprinted from California's Mineral Information Service; and "Cow Punching in Old Georgia," with a page of old cattle brands and marks. The last is reprinted from the Georgia Review. Sandwiched in with the heavier fare are mineral-production summaries, notes for rockhounds, and homegrown poetry.

The Newsletter is sent free to a "carefully pruned" mailing list of about 3,000, and the list is growing steadily. Recipients include Georgia mineral producers, science teachers, rockhounds, libraries, chambers of commerce, newspapers, industrial agents for railroads and power companies, and State officials. Outside the state, the Newsletter goes to State Surveys and to a good many geologists.

The editor has one ironclad rule, namely "to omit sex, religon, and politics, and most of the bad jokes my friends send in." In this day and age, it would seem impossible to issue a readable publication under such a drastic handicap. But it isn't, and the Georgia Mineral Newsletter proves it.

If you have a story on Geology in the Public Eye, write: Dr. Bates, Dept. of Geology, Ohio State University, Columbus, O.

DEAR EDITOR:

Today I saw an issue of GeoTimes which included an article by Dr. J. T. Wilson telling of a Geophysical Tour of Secondary Science Teachers through Northern Ontario. Ours was the group lucky enough to make this enlightening trip and I'm sure some of the executives would like to read the issue concerning it.

Could you send me a copy so that I may share it with the others in this body?

Yours very truly,

NORMAN MASSEY, President
The Science Teachers' Association
of Ontario

DEAR EDITOR:

I have just read Dr. Dott's article in the December GeoTimes on Earth Scientists in the Air Force. I felt that I must make one comment.

The military, mainly the Air Force, fills men to meet its own specifications; it does *not* have men trained for particular jobs before entering service. It is *nice* for the individual, and most of the time lucky for him, to get a job relating to earth science. Therefore, I cannot agree with Dr. Dott's call for men to prepare for service in the military in this field. I don't believe the military will change their methods of call for men, no matter who or what!

Because of the confusion of assignment in the military, I say for fellow earth scientists, you can better satisfy yourselves and the military by being a civilian!

WILLIAM A. RALEY, 1stLt. USAF
Colorado Univ. '55 (Geology)

DEAR EDITOR:

The A.G.I. list of publications is splendid. May we look forward to a "Who Was Who" and "Who Is Who" of American Geologists one of these days?

JAMES S. YOLTON
Chairman, Geology Dept.

DEAR EDITOR:

A Pulitzer for Sandstone Sam!

JOHN R. GEALY
Canadian, Texas

DEAR EDITOR:

I simply want to express my appreciation for having had my name added to the GEOTIMES mailing list. The first issue I received was the October, 1957, issue and I have found that one and the subsequent ones that have been sent to be very informative and useful. Please keep 'em coming!

Thanks.

C. G. HIGGINS
Member AGT, GSA

IOWA STATE COLLEGE
Geologist Dept.
Ames, Iowa

Dear Gentlemen:

I am in the seventh-grade and I atend the Kalona Jr. Hi. My classmates and I are having a argument with the teacher and three other classmates. It is over this statement in our Science books. I quote "Through the centuries water, wind, heat and cold have destroyed rocks and leveled mountains" I unquote. The teacher and the three classmates say it is a theory, and the rest of us say it is a fact. If it is a fact or a theory. If you find it is a fact would you plese write and tell me. If it isn't a fact write and tell me. If it is a fact would you please write tell me this information, the mountains leveled, where they were leveled, and any other information will be suffiect. I'll be waiting for your answer. Thank you.

Sincerely yours,

G. S.
Kalona, Iowa
December 19, 1957

EDITOR'S NOTE: *Can you help in this argument? One way is by supporting the AGI public education program.*

DEAR EDITOR:

Frank N. Bosco's discussion in Vol. II, No. 6, page 15 of the December issue of GeoTimes is informative as it gives an opportunity to find the relative number of "doodlebugs" in oil at the surface and deep underground.

Mr. Bosco was careful to place the figures which I wish to discuss under the paragraph heading: "B. Unscientific Devices (not valid)"

It was stated that 1 million bbls. of oil in the ground weigh 128 million ounces; from which it may be concluded that 1 bbl. of oil weighs 128 ounces or 8 pounds.

Also, the oil tank had a volume of 1280

SCUBA *continued from page 7*

early naturalist for he is in a new environment and is forced to take advantage of every bit of information available in order to construct the geological picture of an area.

Needless to say, very little that is taught in the college courses today will prepare a student geologist for what he will encounter under water. Should he enter this field, he and even the highly experienced geologist, for that matter, will find that much yet remains to be learned about optimum field methods to be used under water.

Relative to other countries, the United States is extremely fortunate, for our scientists have early recognized and accepted the value of SCUBA in marine research. The writer has recently completed a survey of scientists in this country and abroad who are using SCUBA in research and found that we lead by a considerable margin all other countries in *numbers* of scientists using SCUBA as a tool in solving in their problems under water.

This country is ahead in numbers but by no means ahead in quality of scientific work. Having just returned from a trip to England, France, Algeria, and Sweden, the writer has had a chance to evaluate some of the scientific work being done by diving scientists in other countries and found that it is quite comparable with that being done in this country. As might be expected, scientific diving is on a much smaller scale in other countries than in this country. Approximately one-tenth the number of scientists do underwater work in Europe as in the United States. One reason for this is the relatively high cost of SCUBA in foreign countries and a reluctance of older scientists to accept its value as a scientific tool.

To date SCUBA, even in this country, has been a tool for the relatively young geologist. Diving work is usually assigned to a junior geologist in a large company or any research organization. There is no real reason for confining diving to young men, for many geologists between the ages of 40 and 50 are actively diving today and find working under water less fatiguing than a day in the field on land.

To many the term "skin-diving geologist" (a very poor name usually given by local newspaper reporters) brings visions of a man standing at the water's edge, semi-nude, a spear in one hand, fins in the other, ready to take a pleasant dip in clear, warm, tropical waters. Nothing could be farther from the truth, for today the diving geologist can work anywhere depth will allow. He is as serious about his work as any geologist doing field work; indeed he must surmount difficulties to even get to his outcrops which the average field geologist would never dream existed. However, it is worth the additional effort, for underwater field work is one of the most rewarding of all professional experiences as anyone who has visited the world beneath the sea will confirm. I, therefore, cordially invite any geologist, who is willing to spend the few short weeks necessary in learning to dive, to accompany me on an underwater field trip where he will see sights that are unique and that he will remember for the rest of his life.

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cu. ft. and weighed 371,200 ounces; from which it may be concluded that 1 cu. ft. of oil weighs 290 ounces or 18⅛ pounds, hence, 1 gallon oil weighs 2.4 pounds.

As the weigh of his bbl. of oil underground is about 1/50 of its normal weight and the weight of a gallon of oil in the tank is 0.3 of its normal weight; may we conclude that the relative number of doodlebugs in the oil, 5000 feet underground, is 50 x 0.3 or 15 times that of the doodlebugs in the tank?

A deliberate distortion of figures is one way to add a humor, which is the spice of life.

Sincerely,
W. H. Holmes, CE
Sacramento, Calif.

SEGp SCHOLARSHIP FUND HITS JACKPOT

The Scholarship Fund of the SEGp is $128.20 richer as a result of a novel stunt featured in the exhibit booth of Geophysical Services, Inc., at the November meeting of the Society in Dallas.

The theme of the meeting, "Worldwide Exploration" was used to revamp a pinball machine which carried a cutaway section of earth and showed how oil production could be increased through the use of geophysics in exploration. Visitors to the booth were given a nickel for their first play on this exploration venture—after that they were on their own. The machine had few idle moments.

Top honors in the scoring went to B. E. Watson of Calgary, whose score was 6840 bbls/day out of a total possible score of 6990 bbls/day. He was awarded a desk globe as top scorer, but GSI matched dollar for dollar the "take" of the machine and donated the entire $128.20 to the SEGp Scholarship Fund.

TULSA SOCIETIES continue Public Education Program

Pictured here are organizers and leaders of the Tulsa extension course in geology given for the second year under joint sponsorship of the geological and geophysical societies. From the left to right are: Paul Tucker, geophysicist, Carter Oil Company; Miss Lucille Berlin, Supervisor of Science, Tulsa Public Schools; Paul E. Fitzgerald, Dowell Incorporated, Chairman of A.A.P.G. Committee on Public Information and Chairman of Tulsa Geological Society Committee on Public Information; Dr. A. N. Murray, Chairman, Dept. of Geology, Tulsa University, and lecturer on rocks and minerals; Dr. Daniel A. Busch, Chairman of the Extension Course Committee of the T.G.S. Committee on Public Information.

Nothing succeeds like success, and the Tulsa Geological and Geophysical Societies really have the ball rolling with their broad-gauge public education program.

The two societies, in cooperation with Miss Lucille Berlin, Supervisor of Science in the Tulsa public schools, have sponsored for the second year an extension course in the geological sciences for science teachers. Service credit has been given by the Tulsa Board of Education to the 40 teachers who completed the course. The extension program, which was organized by Dr. Daniel A. Busch, assisted by Paul M. Tucker, provided a glittering array of top talent from the profession which would be welcomed on any college campus.

Handling the geophysics side of things was AGI Vice President Paul L. Lyons, J. Roark, and G. H. Westby. Geology lecturers were A. N. Murray, A. L. Levorsen, Henry Schaetti, and Don Busch. Two weekend field trips were staged by Paul Tucker and Jack Brandt. Paul Fitzgerald, who heads up the AAPG Public Information Committee, figured prominently in the program. In November members of the profession also participated in a science panel which featured a talk "The Implications of the IGY" by Paul Lyons.

The Tulsa Geological Society recently made a contribution to the American Geological Institute to provide for GeoTimes to be sent regularly to Tulsa science teachers.

The American Geological Institute and its Member Societies can organize and stimulate public education programs but true success, as was so aptly proved by *Geology Month in Scouting*, is achieved primarily at the local level by individuals and societies who see their community responsibilities and take spirited action.

INTERNATIONAL CONGRESS OF PREHISTORY & EARLY HISTORY

August 24-30
Hamburg

Next August (24th-30th) the fifth meeting of the International Congress of Prehistory and Early History will be held in Hamburg under the Presidency of Professor Gerhard Bersu who has just retired from the direction of the German Archaeological Institute at Frankfurt. Invitations to attend the Congress were sent out in November, and it is hoped that they will have been received by all those who would like to attend it. We are asked to state that attendance is open to all, whether they have received an invitation or not; in spite of all their efforts it has been hard for the organizers to obtain the addresses of everyone likely to be interested, and any omissions should therefore be attributed to this purely general difficulty. The Congress is divided into nine sections dealing with method and technique and the usual archaeological periods; and in each section a day has been set apart for the discussion of a single subject. Among those selected for discussion are standard questions in the publication of excavation reports; new techniques as C-14 and absolute chronology; the influence of mediterranean culture upon the barbarians on its margin; and the survival of Cro-Magnon man into later times. There are excursions before and after the Congress, each lasting for a week. Those who contemplate attending should write for further information to the *Congress President, Gerhard Bersu, Frankfurt am Main, Palmengartenstrasse 10-12.*

VAN NOSTRAND'S SCIENTIFIC ENCYCLOPEDIA, *Third Edition, January 1958, 1,839 pp., D. Van Nostrand Company, Inc., 120 Alexander St., Princeton, N. J. Price $26.85 until 3-17-58, thereafter $30.00.*

Counter to the present day trend to scientific isolation through specialization, this encyclopedia brings together thousands of scientific terms from all scientific disciplines. Approximately 15,000 fundamental terms are defined and explained. The style is such that the terms may be readily understood and the book is excellently cross-referenced. It will find a place on the home, school, office and laboratory reference book shelf. The geological terms were prepared under the editorship of Edward S. C. Smith, of Union College, who was one of more than thirty contributing editors.

THE EARTH'S STORY, *by Gerald Ames and Rose Wyler, 222 pages, 1957. Creative Educational Society, Mankato, Minn.*

One of four volumes of the Creative Science Series designed to provide a visual approach to the physical sciences, this book has been produced in cooperation with the American Museum of Natural History. The book is organized in five parts, the first two of which deal with erosion, deposition, deformation and volcanism. The authors have chosen outstanding photographic examples of geologic processes and have accompanied these pictures with brief, easy to understand, descriptions stripped of geological jargon. Part three in a similar style presents "The Parade of Life" and part four deals with mineral resources. The concluding section is one in which the reader is introduced to the idea that geology can be a fascinating hobby and helpful suggestions are offered. This book is an outstanding contribution to popular literature on geology. It will captivate many a layman and be enjoyed for its selection of fine geological photographs by the professional geologist.

OIL AND GAS FIELD DEVELOPMENT IN UNITED STATES AND CANADA, *Yearbook 1957 (Review of 1956), pp. 1264, P.O. Box 1095, Austin 66, Texas. $10.00.*

Exploratory drilling in the United States and Canada during 1956 is covered in this valuable statistical reference. Information on new discoveries as well as dry holes is included. Tables of producing fields (containing much of the same data published in the AIME "Statistics of Oil and Gas Development and Production") list date of discovery, formation, top of pay, average thickness, productive acreage, deepest zone tested, well data, and production figures. Information on geophysical activity, acreage under lease by major operators and other miscellaneous data on the petroleum industry are included.

P. G. B.

COAL IN SOUTHERN AFRICA, *by E. P. Plumstead, 24 pp., plus map, 1957, Witwatersrand Univ. Press, Milner Park, Johannesburg, Price 4/-.*

A brief semi-technical report on the origin, distribution and nature of the coals of southern Africa. Is intended for the general public.

MECHANIK DER ERDE, *Elemente und Studien zur tektonischen Erdgeschichte, R. A. Sonder, 1956, 291 pages, 91 figures and numerous unnumbered pages. E. Schweizerbartsche Verlagsbuchhandlung (Nägele u. Obermiller) Stuttgart. Price 42-DM (about $9).*

A thorough, well organized treatise on the mechanics of the earth, based primarily on tectonic, stratigraphic and geophysical evidence. Part one (190 p.) on tectonic processes discusses orogenesis, epeirogenesis, rhegmagenesis, taphrogenesis, phorogenesis, pyrogenesis, the geocycles, and the structure of the earth's crust. Part two (80 p.) on theoretical geomechanics deals with mechanical properties of the crust, the tangential tensions, the "undation" of the crust, the tectonic potentials, tangentional stresses and orogenesis, and earth contraction. It is a very valuable supplement to the symposium on the earth's crust published by the Geological Society of America.

G.C.A.

GEOPHYSICS EDITOR

H. L. Farris, Jr., was recently appointed to the staff of the Society of Exploration Geophysicists as Editor of the scientific journal, GEOPHYSICS. His undergraduate work at Washington and Lee and the University of Texas led to the B.A. in 1946. Following World War II he studied at the Oriental Seminary of the Johns Hopkins University and has been the author of a number of papers on Near East studies.

Mr. Farris is a mathematician and is a member of the Mathematical Association of America.

OCEANOGRAPHY

National Academy Forms New Committee

Can radioactive waste products be disposed of in the oceans? What new manned and unmanned devices can be developed to speed our conquest of inner space (the deep ocean)? How should the U. S. proceed in development and construction of an adequate fleet of oceanographic research ships? These problems and many others which effect the future development of the science of oceanography in the United States and our ability to exploit the vast resources of the seas, are under consideration by a new National Academy of Sciences-National Research Council Committee on Oceanography.

Oceanography, the scientific study of the oceans, requires the application of many branches of science because of the close relationship between ocean currents, the distribution of chemical and physical properties, plant and animal life, the atmosphere above and the sediments and solid rocks forming the floor and boundaries of the ocean.

The Committee on Oceanography will form study groups to consider problems of national interest; it will convene conferences, publish the results of its studies and follow through in an attempt to bring its recommendations to the attention of proper authorities and get action taken.

The activities of the Committee to date have been mostly organizational. Two special study panels have been formed, one to study the requirements for and make recommendations regarding the construction of New Oceanographic Research Ships an another to consider new methods and Devices for Exploring the Deep Ocean. Two other panels are being formed; one on Radioactive Waste Disposal in the Ocean and another on Basic Oceanographic Research.

The nine man Committee on Oceanography, which had its first meeting in New York City on the 23rd of November, has among its members heads of three of the larger oceanographic institutions in the United States, fisheries biologists, a geochemist, a marine biologist and a representative of the fisheries industry.

The members are:

DR. HARRISON BROWN (Chairman), Geochemist from the California Institute of Technology

DR. ROGER R. REVELLE, Director of the Scripps Institution of Oceanography

DR. MILNER B. SCHAEFER, Director of the Inter-American Tropical Tuna Commission

DR. ATHELSTAN F. SPILHAUS, Dean of the Minnesota Institute of Technology

DR. FRITZ KOCZY, Chemical Oceanographer from the University of Miami Marine Laboratory

DR. GORDON A. RILEY, Biological Oceanographer from the Bingham Oceanographic Laboratory, Yale University

DR. MAURICE EWING, Director of Lamont Geological Observatory

DR. COLUMBUS O'D. ISELIN, Director of Woods Hole Oceanographic Institution

MR. SUMNER PIKE, Ex-AEC Commissioner and fisheries businessman.

The sponsors of the Committee on Oceanography are: Atomic Energy Commission, Fish & Wildlife Service and Office of Naval Research.

The services of the Committee will be available to all parties, government and private, having national or international problems in oceanography. Inquiries may be addressed to the *Committee on Oceanography, National Research Council, 2101 Constitution Ave., Washington 25, D. C.*

ROCK CHIPS

by SANDSTONE SAM

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Middle age is when you still have the old spark but it takes a little more puffing to kindle the fire.

• • •

Student boner of the month: "A condition favoring the preservation of organisms as fossils is burial in an area with no bacteria or scavengers, such as British Columbia."

• • •

John Szatai, with Richfield in Los Angeles, after diligent research, discovered the following item of current interest in the A.G.I. glossary:

"Cactolith: A quasi-horizontal chonolith composed of anastomosing ductoliths, whose distal ends curl like a harpolith, thin like a sphenolith, or bulge discordantly like an akmolith or ethmolith."

NOTE: Like I said, the glossary is indispensible; so is a dictionary. SsS.

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WICHITA UNIVERSITY, Wichita 14, Kansas. Rank and salary dependent upon qualifications. Ph. D., to teach mineralogy and related courses. Write J. R. Berg, Dept. of Geology.

THE RESEARCH COUNCIL OF ALBERTA invites applications for the following geological positions:

1) Surficial and groundwater studies in southern Alberta—Ph.D. in Pleistocene or Engineering Geology
2) Assistant in micropaleontology laboratory —B.A. or B. Sc.
3) Coal geologist to assess Alberta's coal potential with special reference to outlining areas of large reserves of low cost coal—M.Sc. or Ph.D. in Economic geology, stratigraphy, or Engineering geology

Salary and rank in these positions commensurate with training and experience. Applicants are requested to send a record of training and experience, recent photograph and names of three referees to: Secretary, Research Council of Alberta, 87 Avenue and 114 Street, Edmonton, Alberta, Canada.

MAN WITH A.M. WANTED TO TEACH introductory college courses in Geology and Chemistry in a New England junior college with a strictly liberal arts curriculum and strong academic traditions. Please write for further details and outline your training and experience to Mr. Wayne Davis, Room 846, 73 Tremont St., Boston 8, Mass.

VACANCY: Maine Geological Survey—Applications will be accepted until April 1, 1958, for the position of Geologist III ($107-$133 per week after July 1.) Competitive examination to be scheduled. Office duties with some project field work. Write J. R. Rand, Augusta, Maine.

POSITIONS WANTED

BOX 359. GEOLOGIST, B.S., 6 years exploration in the Four Corners, Panhandle and West Texas. Experience includes seismograph and administration. Desires more responsibility. Excellent references.

BOX 364. ENGINEERING GEOLOGIST, experienced in all phases of ground-water, water-supply, and waste-disposal problems. Desires responsible position, foreign or domestic.

BOX 372. CONSCIENTIOUS teacher, Ph.D. GEOLOGY, seeks unpressured academic environment. Available June.

BOX 379. PETROLEUM GEOLOGIST, B.S. in Geology, 16 years diversified domestic and foreign experience in geology, paleontology, geophysics, land-lease, last 10 years in California with one major oil company. Wants domestic or foreign position. Capable of organizing exploration group or micropaleo-stratigraphy laboratory; age 42; married; geological experience in the Middle East, South America and the U. S. Mid-continent.

BOX 382. GEOLOGIST, B.S., 36, family. Presently USAF officer teaching Air Science at Institute of Technology. Navigator. Speak German. Good language aptitude. Desires work in mining or petroleum U. S. or overseas.

BOX 386. ASSISTANT PROFESSOR, 41, Ph.D. Interested in possibilities of full-time research with petroleum company or research organization. Specialty Rocky Mountain Mesozoic and Tertiary Stratigraphy. Will consider summer work as introduction.

BOX 388. GEOLOGIST, Ph. D., 29, married, desires career teaching and research position in Midwestern or Eastern college or university. Background in stratigraphy, micropaleontology, sedimentology, petrography, and related fields. Industrial and teaching experience.

BOX 389. GEOLOGIST, Ph.D., 49, family. Desires teaching position or administrative-teaching responsibilities in college or university. Interest in sedimentation, petroleum geology, groundwater, sedimentary petrography, stratigraphy, and geophysics. Willing to teach elementary geology, structural geology, "hard-rock" courses, and invertebrate paleontology. 7 years teaching in major university; 16 years experience in petroleum and metals exploration. U.S.G.S. rating of GS-12. Registered geologist. Widely travelled. Excellent references.

BOX 392. GEOLOGIST, BA, married, 3½ years mapping, aerial and detailed, metallic and non-metallic mineral evaluations. Photogeology, some geophysics, report writing.

BOX 393. PETROLEUM GEOLOGIST with geophysical background. M.Sc., Ph.D.; 12½ years with major company, 2 years with independent. Experienced in widely separated petroleum provinces. Capable of planning perceptive and aggressive exploration program. Interested mainly in the great potential of the Rocky Mt. province but will consider other areas. Administrative and executive abilities; will carry out land acquisitions and arrange drilling deals. References.

BOX 395. GEOLOGIST, M.A., Ph.D. residence requirements completed, dissertation partially completed; field and teaching experience. Desires teaching position in either Mineralogy, Elementary Geology, Structural Geology or Geomorphology. Single, 26. Available September 1958.

BOX 396. METALS EXPLORATION GEOLOGIST, Ph.D., married. Desires field or research position with progressive company—foreign or domestic; salaried or consulting basis. Principal interest is in disseminated deposits, light metals, and sedimentary uranium. Well qualified in field and laboratory mineralogy. References furnished. Available 2 weeks notice.

BOX 397. GEOLOGIST, 29, married, 6 years varied experience in all types of mineral deposits for USGS, state and private employers. Exploration main interest, desires western U.S. or possible foreign position. Excellent references. Presently employed, available on reasonable notice.

BOX 398. WHO NEEDS A 29 YEAR OLD, married exploration geologist with varied mineral deposit experience who can write? Has written articles and reports for all levels of geological interest and knowledge. Open to any attractive offer.

BOX 399. GEOLOGIST-GEOPHYSICIST specialising in water. 37, married. B.S., M.S., geology, credits for D.Sc.; physics minor, calculus, physical chemistry, engineering subjects. Returning from Turkey, Iran, Libya, Spain, Greece in charge of extensive U.S. military water supply programs. 5 years U.S.G.S. Proficient in electrical resistivity, magnetometer, seismograph, air photography-mapping, piloting, supervision, reports. Desire water exploration, exploitation, improvement, or research with industry, consultant, or public organization. Available January.

BOX 401. RESEARCH PETROLEUM GEOLOGIST-STRATIGRAPHER, 30, M.S., married, children, extensive experience in most provinces U. S. and Canada. Have utilized newer exploration tools, Entrophy lithofacies mapping, Gamma-Halo surveys, porosity maps, etc. Desire position of responsibility in research or exploration.

BOX 402. GEOLOGIST, B.S., 28, family. Desire position as geologist. Background: one year in geology, three years in geophysics, and eight summers of oil field work during school years. Wish permanent position with a future. Presently employed.

BOX 403. GEOLOGIST, 34, A.M. Geography, A.M. Geology, All Ph.D. requirements except dissertation, field and teaching experience. Main interests: Geomorphology, Economic, Physical, Mineralogy, Geography. Available September.

BOX 404. ECONOMIC GEOLOGIST, PETROLOGIST, Ph. D., actually employed as Visiting Professor at a well-known institution, desires similar position for next year, or permanent affiliation with a geology department of high professional standards. Will also consider research, exploration, or subsurface work. Has taught all geology subjects with exception of intermediate and advanced paleontology and possessed of functional experience. Very good references and available in June 1958.

BOX 405. GEOLOGIST, 47, Ph. D., American, European born and educated, with 12 years of comprehensive domestic and foreign experience in oil exploration and research, with major and independent oil companies, seeks challenging position, domestic or abroad. Wide experience in regional and research-type geology. Speak and write fluently: English, German, French, little Italian. Available January.

BOX 406. GEOPHYSICIST, GEOLOGIST, French, 32, single, fluent English, German. French degrees, 3 yrs. exp. research seismic, mineralogy. Desires position in research any field including seismic, geology, min. or petroleum in Europe or America.

BOX 407. SEDIMENTOLOGIST: facies analysis, micro-paleoecology; Ph. D., 18 years diversified oil company and university experience; seeks foreign or domestic research or exploration position.

BOX 408. GEOLOGIST, B.S., M.A., 23, single, desires position in mineral exploration (foreign or domestic) or teaching with opportunity for research toward Ph.D. Main interests and background in mineralogy, petrology, tectonics, paleontology. Experience includes 2 year teaching assistantship in mineralogy and geology at major university and 1 year exploration geology in Western U. S. Fluent French, basic German. Presently employed, but available on short notice.

GEOLOGIST, B.A., 24, married, 2 children, 3 years grad. study, 4 summers field experience, 3 years teaching experience, desires teaching position in paleontology-sedimentology, prefer position with opportunity to complete Ph.D., 45 Kilball Road, Braintree, Mass.

BOX 409. PALEONTOLOGIST - STRATIGRAPHER, B.S. 18 years experience in paleontology and stratigraphy (Paleozoic through Tertiary) Mid-Continent and South America, capable of organizing micropaleo-stratigraphy laboratory, fluent in Spanish, age 39, married, looking for new and interesting position in Central or South America or in paleo-stratigraphy laboratory in Mid-Continent.

BOX 410, GEOLOGIST, 30, Masters degree, four years experience in sedimentation and mineralogy, desires position in research, mining, or petroleum exploration on West Coast.

BOX 411. GEOLOGIST, Ph. D., family, 6 years of teaching, extensive field experience. Desires better opportunity for advancement of academic rank and salary.

BOX 412. GEOLOGIST, M.A. 28, married. Desires position in stratigraphy or engineering geology. At present doing foundation investigation for state highway department. Desires relocation western states or foreign.

BOX 413. GEOLOGIST-GEOCHEMIST, M.A., Ph.D., Age 26, married, desires industrial job with mining, oil, or chemical company, U.S. or overseas. 4 seasons field experience, 2 seasons Ph.D. research in geochemical prospecting. Resume on request. Excellent references.

BOX 414. GEOLOGIST, 22, B.A., single. Will go anywhere to do anything. Object: Adventure.

BOX 415. GEOLOGIST, B.A., M.S., 30, married, 2 years experience soils geologist, 2 years geology instructor. Desire teaching or industrial position in northern U. S. or Canada.

BOX 416. MINERALOGIST-GEOLOGIST, 37, married, M.S., Ph.D. course work completed, desires position in industrial laboratory or in exploration for mineral deposits. Six years experience in uranium mineralogy and geology.

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Ground Water Branch, 2002 Capitol Ave
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Conservation Branch, Dept. of Planning and Develop
Dept. of Mines and Technical Surveys, Ottawa
Ontario Agricultural College, Guelph; soil maps
Langridge's Map and Oil Lands, 106 Richmond St. West,
Div. of Engineering, Dept. of Lands and Fo
Geology, counties, townships
Many base maps, 1 in. = 1 mi., and township maps, 1 in.
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Dept. of parks and forests
National Parks Branch, Dept. of Northern Affairs and Nat
National Parks and Forests, Parliament Bldgs., Toronto

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National Air Photographic Library, Surveys and Mapping Branch,
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GUIDE BOOKS

Bulletins of technical societies
Dept. of Mines; Geol. Society of America excursions, 1953
Geol. Survey of Canada; *Guidebooks Nos. 2–9*
Geol. Association of Canada, 56 Church St., Toronto
Michigan Geol. Society, Lansing, Mich.

DRILLERS' LOGS

Ontario Fuel Board, 600 University Ave., Toronto; also old well records, elevations; files of pl
Base Metals Mining Corp., Toronto
Geol. Survey of Canada; also old well records, elev

SCOUTING AND DRILLING REPORTS

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